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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,184	08/25/2003	Amlan Datta	129843.109	5153

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EXAMINER

LE, HOA T

ART UNIT PAPER NUMBER

1773

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/648,184

Applicant(s)

DATTA ET AL.

Examiner

H. T. Le

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8,10-14,19-24 and 27-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8,10-14,19-24 and 27-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/03 & 05/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 10, 2006 has been entered.

Claim Rejections - 35 USC § 112

3. **Claims 1-6, 8, 10-13, and 19-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.** The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 and its dependent claims (2-6, 8, 10-13, and 19-23) as amended include the limitation of calcium oxide being 5.2 to 30 wt% and sodium oxide being 4 to 10 wt% based on the weight of the claimed microsphere. The specification as originally filed does not provide support for the recited percentage ranges of calcium oxide and sodium oxide. Nowhere does the specification mention calcium oxide being present at 5.2 wt%. The 30 wt% is the upper limit for all divalent metal oxides, not just calcium oxide alone. See instant

specification, page 9, last paragraph. No where does the specification teaches all divalent metal oxides being calcium oxide. Similarly, the range of 4 to 10 wt% is a percent proportion of all monovalent metal oxides, not just sodium oxide. See page 9, last paragraph. No where does the specification describe sodium oxide being the sole monovalent metal oxide in the microsphere.

4. **Claims 1-6, 8, 10-13, and 19-23 are rejected under 35 U.S.C. 112, first paragraph,** because the specification, while being enabling for a microsphere comprising (1) divalent metal oxide content of up to 30 wt% and (2) monovalent metal oxide content of from about 4 to 10 wt% (see instant specification, page 9, last paragraph), does not reasonably provide enablement for percent of specific calcium oxide and sodium oxide as claimed. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. The 30 wt% is the upper limit for all divalent metal oxides, not just calcium oxide alone. See instant specification, page 9, last paragraph. No where does the specification teaches all divalent metal oxides being calcium oxide. Similarly, the range of 4 to 10 wt% is a percent proportion of all monovalent metal oxides, not just sodium oxide. See page 9, last paragraph. No where does the specification describe sodium oxide being the sole monovalent metal oxide in the microsphere.

5. **Claims 1-6, 8, 10-13, and 19-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

A broad range together with a narrow range that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). In the present instance, claim 1 recites a sodium oxide content of about 4 to 10 wt%, and the claim also recites alkali metal oxide content of less than about 10 wt%. Note that sodium is alkali metal. Thus, claim 1 recites a broad limitation, i.e. up to 10 wt% for alkali metal oxide (i.e. sodium oxide), and the claim also recites “less than about 10 wt%”, which is the narrower statement of range.

In claim 24, line 4, “and” should be added before “wherein” for clarity.

Claim Rejections - 35 USC § 102

6. Claims 1-6, 8, 10-14, 19-24 and 27-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Goetz et al (US 4,983,550).

Claim 1: Goetz teaches hollow glass spheres having particle size larger than 30 microns (col. 5, lines 17-20) and comprising 2-7 wt% of aluminum oxide (col. 3, lines 65-66), 5-20 wt% of CaO (col. 3, lines 53-55), and 2.5 to 12.8 wt% of sodium oxide (col. 3, lines 24-25), and the total alkali metal oxide is from 2-15 wt% (col. 3, lines 22-25), all of which ranges are within or overlapping the claimed ranges.

Claims 2-3: See col. 3, lines 38-51.

Claim 4: See col. 3, lines 46-51.

Claims 5-6: col. 2, lines 10-17 and col. 3, lines 3-10.

Claim 8: col. 2, lines 1-2 and col. 5, lines 30-41.

Claim 10: The material is termed “spheres” just it inherently exhibits aspect ratio of approximately 1.

Claim 11: No explicit report as to the wall thickness, but the hollow spheres taught by Goetz exhibits the same particle size, same density, same composition as indicated in claims 1-10 above, it's necessarily inherent that the hollow spheres exhibit the same wall thickness as claimed.

Claims 12-13: see col. 2, lines 7-10.

Claim 19: Ratio of silica to alumina is 50-57 wt% of silica over 2-7 wt% of alumina, thus its weight ratio is greater than one (unity).

Claims 20-21: See col. 5, lines 17-20.

Claims 22-23: See col. 4, lines 22-30 (heated = calcined). Resulting particles from furnace are fly ash.

Claims 24 and 27-33: See rejection to claims 1-6, 8, 10-14 and 19-23 above.

7. Claims 24 and 27-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Jones et al (US 4,937,210).

Claims 24 and 27: Jones et al teach hollow aluminosilicate microspheres having a spherical wall being substantially free of alkali metal ions (thus free of alkali metal oxide). See col. 2, lines 43-60 and col. 3, lines 1-4. The particle size of the microsphere is at least 20 mm (col. 5, lines 20-22). The spherical wall also comprises at least one pre-selected material, a viscosifying agent (see col. 3, lines 33-38). Particles of aluminosilicate (formed after step (a)) are reported to be between 10 to 100 microns (col. 3, lines 60-65).

Claims 28, 29 and 33: See rejection to claims 24 and 27 above. In addition, the viscosifying agent is functionally equivalent to the claimed blowing agent as it is responsible for the formation of the shell (col. 3, lines 33-38).

Claims 30-32: See col. 3, lines 33-38 and 50-59.

8. Claims 24 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Matthews et al (US 3,838,998).

Claim 24: Matthews teaches glass microspheres having particle size of 50 to 2000 microns (col. 15, lines 14-16). The microspheres contain alkali metal oxide of less than 10 wt% (see col. 6, lines 25-33). The microspheres are formed from slurry of aluminosilicate particles having particle size from 44 to 420 microns (col. 6, line 50 to col. 7, line 20 and col. 8, lines 29-34).

Claim 27: See col. 8, lines 52-61.

9. Claims 24 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by the Torobin '732 patent (US 4,303,732).

Claim 24: Torobin '732 teaches hollow glass microspheres comprising less than 10 wt% of alkali metal oxide (see tables 1, 2 and 4) having particle diameter of 200 microns or more (col. 28, lines 36-40). The microspheres are formed from an aluminosilicate. Torobin does not teach that the aluminosilicate be in particulate form. However, it would not make any difference with regard to the resulting glass microspheres. These claims are product claims. As long as all product limitations are met. How the product is made is patentably irrelevant.


The burden is on Applicant to prove that the recited process limitation provides a product different from the product taught by Torobin.

Claim 27: See Torobin, col. 27, lines 60-66.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. T. Le whose telephone number is 571-272-1511. The examiner can normally be reached on 10:00 a.m. to 6:30 p.m., Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


H. T. Le
Primary Examiner
Art Unit 1773

July 21, 2006